



Remedial Investigation / Feasibility Study

Progress Report #24
October 2018

November 7, 2018

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- A. Project Schedule

1. Introduction

This Progress Report (Report) prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) presents a summary of activities completed during the period of October 2018, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2. Work Completed

This section provides a summary of activities completed or ongoing in October 2018.

2.1 Submittal of Revised Baseline Risk Assessment Work Plans

As described in prior progress reports, CFAC/Roux submitted the final Baseline Human Health Risk Assessment Work Plan (BHHRA WP) to USEPA on September 28, 2018. A letter approval for the BHHRA WP was received on October 23, 2018 from USEPA. Additional comments on the BHHRA WP were also received from MDEQ on October 23, 2018. CFAC/Roux responded to the project team via e-mail on October 23, 2018 that MDEQ's additional comments would be considered as the risk assessment data is evaluated, and the responses to the additional comments would be incorporated into the draft Human Health Risk Assessment Report that will be submitted by March 1, 2019.

CFAC/Roux submitted the final Baseline Ecological Risk Assessment Work Plan (BERA WP) to USEPA on October 25, 2018. A letter approval from USEPA for the BERA WP is pending.

2.2 Submittal of Draft Background Sampling and Analysis Plan

As described in prior progress reports, CFAC/Roux submitted the final Background Investigation Sampling and Analysis Plan (Background SAP) to USEPA on September 14, 2018 and USEPA provided an e-mail on September 19, 2018 indicating no objection to proceeding with the scheduled sampling. A Background SAP approval letter was received from USEPA on October 23, 2018.

2.3 Submittal of Risk Assessment Interim Deliverables

As described in prior progress reports, CFAC/Roux and their risk assessment subcontractor, EHS Support, submitted three risk assessment interim deliverables to provide additional details regarding the risk assessment assumptions and methodology beyond that included in the BHHRA WP and BERA WP. Roux submitted the Technical Memorandum for Proposed Wildlife Exposure Modeling Approach to Support the Baseline Ecological Risk Assessment on August 17, 2018; the Interim Deliverable for the BHHRA Work Plan on August 30, 2018; and the Technical Memorandum: Proposed Refined Ecological Screening Values to Support the Baseline Ecological Risk Assessment on September 25, 2018.

USEPA provided comments on the Technical Memorandum for Proposed Wildlife Exposure Modeling Approach on October 31, 2018. USEPA comments on the two remaining interim deliverables will be provided on November 1, 2018. Roux and EHS Support are currently preparing responses to USEPA comments to be submitted in the next reporting period.

2.4 Phase II Site Characterization Field Activities

Phase II Site Characterization field activities recommenced in late September and were completed in October 2018. This section describes the Phase II Site Characterization field activities that were completed during the reporting period of October 2018. All proposed sampling described in the Phase II Site Characterization Sampling and Analysis Plan (Phase II SAP) and Background SAP was completed in October 2018. Roux personnel demobilized from the Site on October 26, 2018. All field locations, sample intervals, and selected analyses were completed in accordance with the Phase II SAP, Background SAP, and Field Modifications #1, #2, and #3.

2.4.1 Soil Borings and Soil Sampling

All proposed onsite Phase II soil borings were completed in September 2018 and no onsite soil borings were collected in October 2018. Table 1 provides a summary of the soil borings completed and the associated soil samples collected through September 2018. Final boring logs for each soil boring and field forms for soil samples will be provided in the Phase II Site Characterization Data Summary Report.

2.4.2 Groundwater Sampling

Roux completed water-level gauging of Site-wide monitoring wells on October 1 and October 2, 2018. Groundwater levels in 75 of the 77 monitoring wells and former production wells were measured with an electronic water-level meter capable of measuring fluid elevation with an accuracy of 0.01 feet. Two of the monitoring wells (CFMW-016 and CFMW-017) were dry at the time of the gauging event.

Roux and Hydrometrics completed groundwater sampling at 72 well locations from October 3, 2018 through October 23, 2018. Groundwater samples were collected from all eight new monitoring wells installed during Phase II field activities, 41 monitoring well locations installed during Phase I field activities, 18 existing wells, and five former production wells. A groundwater sample was unable to be collected from existing monitoring wells, CFMW-017 and CFMW-025, and Phase I monitoring wells, CFMW-002, CFMW-016, and CFMW-018, due to an insufficient volume of water in the well casing during the sampling event.

Groundwater samples were collected using the methods described in *Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling* (USEPA, 2010). During purging, a water quality meter was used to monitor water quality indicator parameters including pH, conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP), temperature, and turbidity. The field parameters were recorded on monitoring well sampling datasheets and will be submitted with the Phase II Site Characterization Data Summary Report.

All groundwater samples collected were sent to TestAmerica and analyzed for the parameters described in the Phase II SAP. The groundwater samples collected are summarized in Table 2. Results of the groundwater sampling activities will be provided in the Phase II Site Characterization Data Summary Report.

2.4.3 Surface Water, Sediment, and Porewater Sampling

Surface water, sediment, and porewater sampling was completed at 34 locations within the Flathead River, Backwater Seep Sampling Area, Cedar Creek, and South Percolation Ponds from October 3, 2018 through October 18, 2018. One surface water sample was collected from CFSWP-039 in the Cedar Creek Reservoir Overflow on October 11, 2018. Four opportunity surface water samples were also collected within Cedar Creek from CFMW-014, CFMW-015, CFMW-044, and CFMW-045 to enable further evaluation of cyanide concentrations. Surface water, sediment, and porewater samples were unable to be collected from 25 locations in the North-West Percolation Pond, North-East Percolation Pond, Northern Surface Water Feature, and Cedar Creek Reservoir Overflow due to insufficient water in those features during the sampling event. All surface water, sediment, and porewater samples were sent to their respective laboratories for analysis as outlined in the Phase II SAP. Table 3 provides a summary of the samples collected through October 2018.

Additionally, as part of the low-water surface water sampling, the discharge of Cedar Creek and Cedar Creek Drainage Overflow were measured utilizing a mechanical current-meter method in accordance with Roux SOP 6.7. Discharge will be evaluated as part of the Phase II Site Characterization Data Summary Report.

2.4.4 Background Sampling

All background soil borings were completed in September 2018. Table 1 provides a summary of the background soil borings completed and the associated soil samples collected through September 2018.

Background surface water and sediment samples were collected from ten locations within the Flathead River upgradient of the CFAC Site and from ten locations in the headwaters of Cedar Creek upgradient of the Site. Background surface water and sediment samples were collected from October 2, 2018 through October 15, 2018 in accordance with the Background SAP. All samples were sent to TestAmerica for analysis of parameters specified in the Background SAP. Background surface water and sediment samples collected are summarized in Table 3. Results of background sampling will be presented in the Phase II Site Characterization Data Summary Report.

Additionally, as part of the background surface water sampling, the discharge of the headwaters of Cedar Creek upgradient of the Site were measured utilizing a mechanical current-meter method in accordance with Roux SOP 6.7. Discharge will be evaluated as part of the Phase II Site Characterization Data Summary Report.

2.5 Investigation Derived Waste Disposal

Investigation-derived waste (IDW) generated during the Phase II Site Characterization field activities are being managed in accordance with the IDW Management Plan dated May 9, 2016 and the AOC. Monitoring well development purge water and groundwater IDW is being stored onsite in accordance with the IDW Management Plan. Upon completion of sampling activities, Roux personnel collected a water IDW waste characterization sample from the container onsite for disposal of water to be coordinated in accordance with the IDW Management Plan and AOC.

2.6 Preparation of the Phase II Site Characterization Data Summary Report

Roux continued to review and analyze the field and laboratory data generated during the Phase II Site Characterization Program. As described in Section 4.0, all validated laboratory data from the first round of sampling in 2018 was received in August. Laboratory data from the second round of sampling in 2018 was submitted to the validator in October 2018 and will continue to be submitted in November 2018. The Draft Phase II Site Characterization Data Summary Report presenting the data will be prepared and submitted to USEPA/MDEQ for review in accordance with the schedule provided in Section 5.0.

2.7 Weekly Reporting, Project Conference Calls, and Project Meetings

Weekly reports were submitted to USEPA for the fall sampling activities conducted in October 2018. USEPA, MDEQ, Glencore/CFAC, CDM Smith, and Roux held a project update meeting at the Site on October 17, 2018. Agenda items included outstanding items with USEPA, approval letters for project deliverables, review schedule for project deliverables, upcoming submittals to USEPA, fall sampling update, RI/FS schedule review, and demolition update. Meeting minutes documenting the project update meeting were submitted to USEPA on October 24, 2018. Following the project update meeting, a Community Liaison Panel/Public Meeting was hosted by Ann Green Communications and was attended by USEPA, MDEQ, Glencore/CFAC, CDM Smith, and Roux. The next project update meeting is not currently scheduled.

3. Work Planned for Next Reporting Period

This section summarizes the work planned for the next reporting period of November 2018.

3.1 Baseline Risk Assessment Work Plans

As described in Section 2.1, CFAC/Roux submitted the final BERA WP to USEPA on October 25, 2018. A letter approval from USEPA for the BERA WP is pending.

3.2 Preparation of Risk Assessment Interim Deliverables

Roux and EHS Support submitted three risk assessment interim deliverables in August and September 2018. USEPA provided comments on the Technical Memorandum for Proposed Wildlife Exposure Modeling Approach on October 31, 2018. USEPA comments on the two remaining interim deliverables will be provided on November 1, 2018. Roux and EHS Support are currently preparing responses to USEPA comments to be submitted in the next reporting period.

3.3 Preparation of the Phase II Site Characterization Data Summary Report

Roux will continue to review and analyze the field and laboratory data generated during the Phase II Site Characterization Program in preparation of the Draft Phase II Site Characterization Data Summary Report. The report will be submitted to USEPA/MDEQ for review in accordance with the schedule provided in Section 5.0.

3.4 Investigation Derived Waste

Monitoring well development purge water and groundwater IDW is being stored onsite in accordance with the IDW Management Plan. Water IDW was generated through October 2018 until groundwater sampling and surface water sampling activities were completed. Upon completion of sampling activities, Roux personnel collected a water IDW sample from the container onsite for waste characterization analysis. Based on the sample results, Roux, with the support of Cascade Drilling, will coordinate water disposal in accordance with the IDW Management Plan.

4. Database Updates

Validation of laboratory data from the Phase II Site Characterization is being performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux. All validated laboratory data from the first round of sampling in 2018 has been received and uploaded to the CFAC RI/FS database. In October 2018, LDC provided 18 sets of validated analytical data to Roux. Laboratory electronic data deliverables for the second round of sampling in 2018 will continue to be sent to LDC through November 2018. Validated data from the second round of sampling will be uploaded to the CFAC RI/FS database in the next reporting period by Roux.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the Phase II SAP. Future progress reports will discuss updates to the project database.

5. Scope/Schedule Revisions

An updated project schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect progress based on RI/FS activities completed through October 2018. A schedule for the Phase II Site Characterization was included in the Phase II SAP and will be provided to USEPA routinely throughout the RI/FS in future progress reports.

As discussed during the October 17, 2018 project updating meeting and described via e-mail on October 31, 2018, CFAC/Roux proposed to advance the RI/FS schedule by reducing report preparation time and by combining the substance of the Draft and Final Candidate Technologies and Remedial Alternative Memorandum with the Feasibility Study Work Plan. A revised version of the RI/FS Schedule in Table 3 of the RI/FS Work Plan was submitted with the October 31, 2018 e-mail request.

The RI/FS Work Plan and thus the RI/FS Schedule in Table 3 is included as part of the Administrative Settlement Agreement and Order on Consent (AOC) between the USEPA and CFAC dated November 30, 2015. Therefore, CFAC views this proposed modification as a modification to the AOC. In accordance with Section XXIX of the AOC (i.e., EFFECTIVE DATE AND SUBSEQUENT MODIFICATION), CFAC has reached out to USEPA counsel to discuss an Amendment 2 to the AOC. Pending USEPA managerial approval, a signed version of the AOC amendment will be sent to USEPA counsel for signature.

On behalf of CFAC, Roux will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

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TABLE 1

Soil Samples Collected through October 2018

Table 1. Soil Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Location Type	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFBSB-001	Background Soil	9/25/2018	X							
CFBSB-002	Background Soil	9/25/2018	X							
CFBSB-003	Background Soil	9/25/2018	X							
CFBSB-004	Background Soil	9/25/2018	X							
CFBSB-005	Background Soil	9/25/2018	X							
CFBSB-006	Background Soil	9/25/2018	X							
CFBSB-007	Background Soil	9/25/2018	X							
CFBSB-008	Background Soil	9/25/2018	X							
CFBSB-009	Background Soil	9/25/2018	X							
CFBSB-010	Background Soil	9/25/2018	X							
CFBSB-011	Background Soil	9/28/2018	X							
CFBSB-012	Background Soil	9/28/2018	X							
CFBSB-013	Background Soil	9/28/2018	X							
CFBSB-014	Background Soil	9/28/2018	X							
CFBSB-015	Background Soil	9/28/2018	X							
CFBSB-016	Background Soil	9/28/2018	X							
CFBSB-017	Background Soil	9/28/2018	X							
CFBSB-018	Background Soil	9/28/2018	X							
CFBSB-019	Background Soil	9/28/2018	X							
CFBSB-020	Background Soil	9/28/2018	X							
CFBSB-021	Background Soil	9/26/2018	X							
CFBSB-022	Background Soil	9/26/2018	X							
CFBSB-023	Background Soil	9/26/2018	X							
CFBSB-024	Background Soil	9/26/2018	X							
CFBSB-025	Background Soil	9/26/2018	X							
CFBSB-026	Background Soil	9/26/2018	X							
CFBSB-027	Background Soil	9/26/2018	X							
CFBSB-028	Background Soil	9/26/2018	X							
CFBSB-029	Background Soil	9/26/2018	X							
CFBSB-030	Background Soil	9/26/2018	X							
CFBSB-031	Background Soil	9/27/2018	X							
CFBSB-032	Background Soil	9/27/2018	X							
CFBSB-033	Background Soil	9/27/2018	X							
CFBSB-034	Background Soil	9/27/2018	X							
CFBSB-035	Background Soil	9/27/2018	X							
CFBSB-036	Background Soil	9/27/2018	X							
CFBSB-037	Background Soil	9/27/2018	X							
CFBSB-038	Background Soil	9/27/2018	X							
CFBSB-039	Background Soil	9/27/2018	X							
CFBSB-040	Background Soil	9/27/2018	X							
CFSB-168	Soil	9/27/2018	X	X						
CFSB-172	Soil	9/26/2018	X	X						
CFSB-189	Soil	9/27/2018	X	X						
CFSB-190	Soil	9/27/2018	X	X						

Table 1. Soil Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Location Type	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-196	Soil	9/27/2018	X	X						
CFSB-205	Soil	9/26/2018	X	X						
CFSB-238	Soil	9/25/2018	X	X						
CFSB-239	Soil	9/27/2018	X	X						
CFSB-274	Soil	9/28/2018	X	X						
CFSB-275	Soil	9/28/2018	X	X						
CFSB-276	Soil	9/28/2018	X	X						
CFSB-278	Soil	9/28/2018	X	X						
CFSB-288	Soil	9/27/2018	X	X						
CFSB-289	Soil	9/27/2018	X	X						
CFSB-290	Soil	9/27/2018	X	X						
CFSB-293	Soil	9/27/2018	X	X						
CFSB-294	Soil	9/27/2018	X	X						

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TABLE 2

Groundwater Samples Collected through October 2018

Table 2. Groundwater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Location Type	Screen Type	Date Sample Collected
CFMW-001	Existing Monitoring Well	Upper Hydrogeologic Unit	10/10/2018
CFMW-003	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/10/2018
CFMW-003a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/23/2018
CFMW-007	Existing Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-008	Existing Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-008a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/17/2018
CFMW-010	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/3/2018
CFMW-011	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/11/2018
CFMW-011a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/8/2018
CFMW-012	Existing Monitoring Well	Upper Hydrogeologic Unit	10/3/2018
CFMW-012a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/23/2018
CFMW-014	Existing Monitoring Well	Upper Hydrogeologic Unit	10/11/2018
CFMW-015	Existing Monitoring Well	Upper Hydrogeologic Unit	10/11/2018
CFMW-016a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-019	Existing Monitoring Well	Upper Hydrogeologic Unit	10/15/2018
CFMW-019a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/23/2018
CFMW-020	Existing Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-021	Existing Monitoring Well	Upper Hydrogeologic Unit	10/15/2018
CFMW-022	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-023	Existing Monitoring Well	Upper Hydrogeologic Unit	10/17/2018
CFMW-025a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/10/2018
CFMW-025b	Existing Monitoring Well	Upper Hydrogeologic Unit	10/10/2018
CFMW-026	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/17/2018
CFMW-027	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/11/2018
CFMW-028	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/17/2018
CFMW-028a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-029	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-031	Existing Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-032	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-032a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/4/2018
CFMW-033	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/16/2018
CFMW-034	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/12/2018
CFMW-035	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/12/2018
CFMW-036	Existing Former Production Well	Production Well	10/18/2018
CFMW-037	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/12/2018
CFMW-038	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/9/2018
CFMW-040	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-042	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-043	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/11/2018
CFMW-044	Existing Monitoring Well	Upper Hydrogeologic Unit	10/3/2018
CFMW-044a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/16/2018
CFMW-044b	Existing Monitoring Well	Below Upper Hydrogeologic Unit	10/11/2018
CFMW-045	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-045a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/16/2018

Table 2. Groundwater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Location Type	Screen Type	Date Sample Collected
CFMW-047	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/4/2018
CFMW-048	Existing Former Production Well	Production Well	10/15/2018
CFMW-049	Existing Monitoring Well	Upper Hydrogeologic Unit	10/3/2018
CFMW-049a	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/3/2018
CFMW-050	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/12/2018
CFMW-051	Existing Former Production Well	Production Well	10/12/2018
CFMW-052	Existing Former Production Well	Production Well	10/15/2018
CFMW-053	Existing Monitoring Well	Upper Hydrogeologic Unit	10/17/2018
CFMW-053a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/11/2018
CFMW-054	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-056	Existing Monitoring Well	Below Upper Hydrogeologic Unit	10/9/2018
CFMW-056a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/9/2018
CFMW-056b	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/16/2018
CFMW-057	Existing Monitoring Well	Below Upper Hydrogeologic Unit	10/10/2018
CFMW-057a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/10/2018
CFMW-057b	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/16/2018
CFMW-059	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/9/2018
CFMW-059a	Phase I Monitoring Well	Below Upper Hydrogeologic Unit	10/15/2018
CFMW-061	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-062	Existing Former Production Well	Production Well	10/18/2018
CFMW-064	Phase I Monitoring Well	Upper Hydrogeologic Unit	10/8/2018
CFMW-065	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/15/2018
CFMW-066	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/15/2018
CFMW-067	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-068	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/9/2018
CFMW-069	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/16/2018
CFMW-070	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/5/2018
CFMW-071	Phase II Monitoring Well	Upper Hydrogeologic Unit	10/9/2018

TABLE 3

Surface Water, Sediment, and Porewater Samples Collected through
October 2018

Table 3. Surface Water, Sediment, and Porewater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Sample ID	Media	Date Sample Collected	Site Feature
CFBSWP-001	CFBSWP-001	Background Surface Water	10/15/2018	Background Cedar Creek
CFBSWP-001	CFBSDP-001	Background Sediment	10/15/2018	Background Cedar Creek
CFBSWP-002	CFBSWP-002	Background Surface Water	10/15/2018	Background Cedar Creek
CFBSWP-002	CFBSDP-002	Background Sediment	10/15/2018	Background Cedar Creek
CFBSWP-003	CFBSWP-003	Background Surface Water	10/15/2018	Background Cedar Creek
CFBSWP-003	CFBSDP-003	Background Sediment	10/15/2018	Background Cedar Creek
CFBSWP-004	CFBSWP-004	Background Surface Water	10/12/2018	Background Cedar Creek
CFBSWP-004	CFBSDP-004	Background Sediment	10/12/2018	Background Cedar Creek
CFBSWP-005	CFBSWP-005	Background Surface Water	10/15/2018	Background Cedar Creek
CFBSWP-005	CFBSDP-005	Background Sediment	10/15/2018	Background Cedar Creek
CFBSWP-006	CFBSWP-006	Background Surface Water	10/12/2018	Background Cedar Creek
CFBSWP-006	CFBSDP-006	Background Sediment	10/12/2018	Background Cedar Creek
CFBSWP-007	CFBSWP-007	Background Surface Water	10/12/2018	Background Cedar Creek
CFBSWP-007	CFBSDP-007	Background Sediment	10/12/2018	Background Cedar Creek
CFBSWP-008	CFBSWP-008	Background Surface Water	10/15/2018	Background Cedar Creek
CFBSWP-008	CFBSDP-008	Background Sediment	10/15/2018	Background Cedar Creek
CFBSWP-009	CFBSWP-009	Background Surface Water	10/12/2018	Background Cedar Creek
CFBSWP-009	CFBSDP-009	Background Sediment	10/12/2018	Background Cedar Creek
CFBSWP-010	CFBSWP-010	Background Surface Water	10/12/2018	Background Cedar Creek
CFBSWP-010	CFBSDP-010	Background Sediment	10/12/2018	Background Cedar Creek
CFBSWP-011	CFBSWP-011	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-011	CFBSDP-011	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-012	CFBSWP-012	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-012	CFBSDP-012	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-013	CFBSWP-013	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-013	CFBSDP-013	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-014	CFBSWP-014	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-014	CFBSDP-014	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-015	CFBSWP-015	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-015	CFBSDP-015	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-016	CFBSWP-016	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-016	CFBSDP-016	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-017	CFBSWP-017	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-017	CFBSDP-017	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-018	CFBSWP-018	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-018	CFBSDP-018	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-019	CFBSWP-019	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-019	CFBSDP-019	Background Sediment	10/2/2018	Background Flathead River
CFBSWP-020	CFBSWP-020	Background Surface Water	10/2/2018	Background Flathead River
CFBSWP-020	CFBSDP-020	Background Sediment	10/2/2018	Background Flathead River
CFSWP-001	CFSWP-001	Surface Water	10/5/2018	Flathead River
CFSWP-001	CFSDP-001	Sediment	10/5/2018	Flathead River
CFSWP-001	CFWP-001	Porewater	10/5/2018	Flathead River
CFSWP-002	CFSWP-002	Surface Water	10/5/2018	Flathead River

Table 3. Surface Water, Sediment, and Porewater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Sample ID	Media	Date Sample Collected	Site Feature
CFSWP-002	CFSDP-002	Sediment	10/5/2018	Flathead River
CFSWP-002	CFPWP-002	Porewater	10/5/2018	Flathead River
CFSWP-003	CFSWP-003	Surface Water	10/4/2018	Backwater Seep Area
CFSWP-003	CFSDP-003	Sediment	10/4/2018	Backwater Seep Area
CFSWP-003	CFPWP-003	Porewater	10/4/2018	Backwater Seep Area
CFSWP-004	CFSWP-004	Surface Water	10/4/2018	Backwater Seep Area
CFSWP-004	CFSDP-004	Sediment	10/4/2018	Backwater Seep Area
CFSWP-004	CFPWP-004	Porewater	10/4/2018	Backwater Seep Area
CFSWP-005	CFSWP-005	Surface Water	10/18/2018	Backwater Seep Area
CFSWP-005	CFSDP-005	Sediment	10/18/2018	Backwater Seep Area
CFSWP-005	CFPWP-005	Porewater	10/18/2018	Backwater Seep Area
CFSWP-006	CFSWP-006	Surface Water	10/4/2018	Flathead River
CFSWP-006	CFSDP-006	Sediment	10/4/2018	Flathead River
CFSWP-006	CFPWP-006	Porewater	10/4/2018	Flathead River
CFSWP-007	CFSWP-007	Surface Water	10/3/2018	Flathead River
CFSWP-007	CFSDP-007	Sediment	10/3/2018	Flathead River
CFSWP-007	CFPWP-007	Porewater	10/3/2018	Flathead River
CFSWP-008	CFSWP-008	Surface Water	10/3/2018	Flathead River
CFSWP-008	CFSDP-008	Sediment	10/3/2018	Flathead River
CFSWP-008	CFPWP-008	Porewater	10/3/2018	Flathead River
CFSWP-014	CFSWP-014	Surface Water	10/10/2018	Cedar Creek
CFSWP-014	CFSWP-014	Surface Water	10/16/2018	Cedar Creek
CFSWP-014	CFSDP-014	Sediment	10/10/2018	Cedar Creek
CFSWP-014	CFPWP-014	Porewater	10/10/2018	Cedar Creek
CFSWP-015	CFSWP-015	Surface Water	10/9/2018	Cedar Creek
CFSWP-015	CFSWP-015	Surface Water	10/16/2018	Cedar Creek
CFSWP-015	CFSDP-015	Sediment	10/9/2018	Cedar Creek
CFSWP-015	CFPWP-015	Porewater	10/9/2018	Cedar Creek
CFSWP-016	CFSWP-016	Surface Water	10/9/2018	Cedar Creek
CFSWP-016	CFSDP-016	Sediment	10/9/2018	Cedar Creek
CFSWP-016	CFPWP-016	Porewater	10/9/2018	Cedar Creek
CFSWP-017	CFSWP-017	Surface Water	10/3/2018	Flathead River
CFSWP-017	CFSDP-017	Sediment	10/3/2018	Flathead River
CFSWP-017	CFPWP-017	Porewater	10/3/2018	Flathead River
CFSWP-018	CFSWP-018	Surface Water	10/17/2018	South Percolation Ponds
CFSWP-018	CFSDP-018	Sediment	10/17/2018	South Percolation Ponds
CFSWP-018	CFPWP-018	Porewater	10/17/2018	South Percolation Ponds
CFSWP-019	CFSWP-019	Surface Water	10/16/2018	South Percolation Ponds
CFSWP-019	CFSDP-019	Sediment	10/16/2018	South Percolation Ponds
CFSWP-019	CFPWP-019	Porewater	10/16/2018	South Percolation Ponds
CFSWP-020	CFSWP-020	Surface Water	10/11/2018	South Percolation Ponds
CFSWP-020	CFSDP-020	Sediment	10/11/2018	South Percolation Ponds
CFSWP-020	CFPWP-020	Porewater	10/11/2018	South Percolation Ponds
CFSWP-025	CFSWP-025	Surface Water	10/10/2018	Cedar Creek

Table 3. Surface Water, Sediment, and Porewater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Sample ID	Media	Date Sample Collected	Site Feature
CFSWP-025	CFSDP-025	Sediment	10/10/2018	Cedar Creek
CFSWP-025	CFPWP-025	Porewater	10/10/2018	Cedar Creek
CFSWP-026	CFSWP-026	Surface Water	10/5/2018	Backwater Seep Area
CFSWP-026	CFSDP-026	Sediment	10/5/2018	Backwater Seep Area
CFSWP-026	CFPWP-026	Porewater	10/5/2018	Backwater Seep Area
CFSWP-027	CFSWP-027	Surface Water	10/5/2018	Backwater Seep Area
CFSWP-027	CFSDP-027	Sediment	10/5/2018	Backwater Seep Area
CFSWP-027	CFPWP-027	Porewater	10/5/2018	Backwater Seep Area
CFSWP-028	CFSWP-028	Surface Water	10/4/2018	Backwater Seep Area
CFSWP-028	CFSDP-028	Sediment	10/4/2018	Backwater Seep Area
CFSWP-028	CFPWP-028	Porewater	10/4/2018	Backwater Seep Area
CFSWP-029	CFSWP-029	Surface Water	10/18/2018	Backwater Seep Area
CFSWP-029	CFSDP-029	Sediment	10/18/2018	Backwater Seep Area
CFSWP-029	CFPWP-029	Porewater	10/18/2018	Backwater Seep Area
CFSWP-030	CFSWP-030	Surface Water	10/18/2018	South Percolation Ponds
CFSWP-030	CFSDP-030	Sediment	10/18/2018	South Percolation Ponds
CFSWP-030	CFPWP-030	Porewater	10/18/2018	South Percolation Ponds
CFSWP-031	CFSWP-031	Surface Water	10/18/2018	South Percolation Ponds
CFSWP-031	CFSDP-031	Sediment	10/18/2018	South Percolation Ponds
CFSWP-031	CFPWP-031	Porewater	10/18/2018	South Percolation Ponds
CFSWP-032	CFSWP-032	Surface Water	10/17/2018	South Percolation Ponds
CFSWP-032	CFSDP-032	Sediment	10/17/2018	South Percolation Ponds
CFSWP-032	CFPWP-032	Porewater	10/17/2018	South Percolation Ponds
CFSWP-033	CFSWP-033	Surface Water	10/17/2018	South Percolation Ponds
CFSWP-033	CFSDP-033	Sediment	10/17/2018	South Percolation Ponds
CFSWP-033	CFPWP-033	Porewater	10/17/2018	South Percolation Ponds
CFSWP-034	CFSWP-034	Surface Water	10/5/2018	Flathead River
CFSWP-034	CFSDP-034	Sediment	10/5/2018	Flathead River
CFSWP-034	CFPWP-034	Porewater	10/5/2018	Flathead River
CFSWP-035	CFSWP-035	Surface Water	10/5/2018	Flathead River
CFSWP-035	CFSDP-035	Sediment	10/5/2018	Flathead River
CFSWP-035	CFPWP-035	Porewater	10/5/2018	Flathead River
CFSWP-036	CFSWP-036	Surface Water	10/4/2018	Flathead River
CFSWP-036	CFSDP-036	Sediment	10/4/2018	Flathead River
CFSWP-036	CFPWP-036	Porewater	10/4/2018	Flathead River
CFSWP-037	CFSWP-037	Surface Water	10/3/2018	Flathead River
CFSWP-037	CFSDP-037	Sediment	10/3/2018	Flathead River
CFSWP-037	CFPWP-037	Porewater	10/3/2018	Flathead River
CFSWP-038	CFSWP-038	Surface Water	10/3/2018	Flathead River
CFSWP-038	CFSDP-038	Sediment	10/3/2018	Flathead River
CFSWP-038	CFPWP-038	Porewater	10/3/2018	Flathead River
CFSWP-039	CFSWP-039	Surface Water	10/11/2018	Cedar Creek Reservoir Overflow
CFSWP-044	CFSWP-044	Surface Water	10/10/2018	Cedar Creek
CFSWP-044	CFSWP-044	Surface Water	10/16/2018	Cedar Creek

Table 3. Surface Water, Sediment, and Porewater Samples Collected through October 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Sample Location	Sample ID	Media	Date Sample Collected	Site Feature
CFSWP-044	CFSDP-044	Sediment	10/10/2018	Cedar Creek
CFSWP-044	CFPWP-044	Porewater	10/10/2018	Cedar Creek
CFSWP-045	CFSWP-045	Surface Water	10/9/2018	Cedar Creek
CFSWP-045	CFSWP-045	Surface Water	10/16/2018	Cedar Creek
CFSWP-045	CFSDP-045	Sediment	10/9/2018	Cedar Creek
CFSWP-045	CFPWP-045	Porewater	10/9/2018	Cedar Creek
CFSWP-058	CFSWP-058	Surface Water	10/11/2018	South Percolation Ponds
CFSWP-058	CFSDP-058	Sediment	10/11/2018	South Percolation Ponds
CFSWP-058	CFPWP-058	Porewater	10/11/2018	South Percolation Ponds
CFSWP-059	CFSWP-059	Surface Water	10/11/2018	South Percolation Ponds
CFSWP-059	CFSDP-059	Sediment	10/11/2018	South Percolation Ponds
CFSWP-059	CFPWP-059	Porewater	10/11/2018	South Percolation Ponds
CFSWP-060	CFSWP-060	Surface Water	10/16/2018	South Percolation Ponds
CFSWP-060	CFSDP-060	Sediment	10/16/2018	South Percolation Ponds
CFSWP-060	CFPWP-060	Porewater	10/16/2018	South Percolation Ponds

Remedial Investigation / Feasibility Study
Progress Report #24

APPENDIX A

Project Schedule

R/F/S Schedule Updated October 29, 2018

ID	Deliverable/Task Name	Duration	Start	Finish	Company	Predecessors	January 2016	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017	August 2017	September 2017	October 2017	Nov
1	AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC																								
2	Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux																								
3	X Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1																							
4	X Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3																							
5	Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16																									
6	Pre-Intrusive Task 1 - Site Reconnaissance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	55S																							
7	Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6																							
8	Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	7SS																							
9	SAP Addendum	75 days	Mon 4/18/16	Fri 7/29/16	Roux																								
10	X Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6																							
11	EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10																							
12	X Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11																							
13	Source Area Investigation - Phase I Site Characterization Field Activities	120 days	Mon 5/9/16	Fri 10/21/16	Roux/Hydrometrics																								
14	GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux																								
15	Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux																								
16	Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days																							
17	Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days																							
18	Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days																							
19	Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux																								
20	Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux																								
21	Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics																								
22	Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18																							
23	Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22																							
24	Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days																							
25	Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24																							
26	Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays																							
27	Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26																							
28	Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays																							
29	Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28																							
30	Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays																							
31	Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30																							
32	Investigation Derived Waste Management/Disposal	390 days	Mon 4/4/16	Fri 9/29/17	Roux	55S																							
33	Phase 1 Site Characterization Data Summary Report	251 days	Mon 10/3/16	Mon 9/18/17	Roux																								
34	Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25																							
35	X Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
36	EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35																							
37	X Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36																							
38	X Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	37																							
39	Screening Level Ecological Risk Assessment (SLERA)	361 days	Mon 5/2/16	Mon 9/18/17	Roux																								
40	Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux																								
41	X Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
42	EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41																							
43	X Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42																							
44	X Final Submission of SLERA Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	43																							
45	2017 Additional Field Activities	85 days	Mon 4/17/17	Fri 8/11/17	Roux																								
46	Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36																							
47	Pneumatic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31																							
48	Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47																							
49	Groundwater and Surface Water Sampling Data Summary Report	101 days	Mon 7/10/17	Mon 11/27/17	Roux																								
50	Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31																							
51	X GW/SW Summary Report to EPA/MDEQ	76 days	Mon 8/14/17	Mon 11/27/17	Roux	50																							
52	Baseline Human Health Risk Assessment Work Plan	270 days	Mon 9/18/17	Fri 9/28/18	Roux																								
53	X Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	38																							
54	EPA review of Draft BHHRA Work plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	53																							
55	X Response to EPA/MDEQ Comments on BHHRA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	54																							
56	EPA review of Response to Comments on BHHRA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	55																							
57	X Final Submission of BHHRA WP to EPA/MDEQ	15 days	Mon 9/10/18	Fri 9/28/18	Roux	56																							
58	Baseline Ecological Risk Assessment Work Plan	275 days	Mon 9/18/17	Fri 10/5/18	Roux																								
59	X Draft BERA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	44																							
60	EPA review of Draft BERA Work Plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	59																							
61	X Response to EPA/MDEQ Comments on BERA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	60																							
62	EPA review of Response to Comments on BERA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	61																							
63	X Final Submission BERA Work Plan to EPA/MDEQ	20 days	Mon 9/10/18	Fri 10/5/18	Roux	62																							
64	Phase II Remedial Investigation Sampling and Analysis Plan	117 days	Tue 11/28/17	Wed 5/9/18	Roux																								
65	X Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	67 days	Tue 11/28/17	Wed 2/28/18	Roux	51																							
66	EPA review of draft Phase II Sampling and Analysis Plan	25 days	Thu 3/1/18	Wed 4/4/18	EPA	65																							
67	X Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	15 days	Thu 4/5/18	Wed 4/25/18	Roux	66																							
68	X Final Phase II Sampling and Analysis Plan	10 days	Thu 4/26/18	Wed 5/9/18	Roux	67																							
69	South Percolation Pond Expedited Risk Assessment	35 days	Mon 10/30/17	Fri 12/15/17	Roux																								
70	South Percolation Pond Risk Expedited Risk Assessment Field Activities	10 days	Mon 10/30/17	Fri 11/10/17	Roux																								
71	Validation of South Pond Data	25 days	Mon 11/13/17	Fri 12/15/17	Data Validator	70																							
72	Phase II Remedial Investigation	129 days	Wed 4/25/18	Fri 10/19/18	Roux																								
73	Site Reconnaissance	3 days	Wed 4/25/18	Fri 4/27/18	Roux	73																							

ID	Deliverable/Task Name	Duration	Start	Finish	Company	Predecessors	November 2017	December 2017	January 2018	February 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	September 2019
1	AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC																								
2	Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux																								
3	X Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1																							
4	X Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3																							
5	Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16																									
6	Pre-Intrusive Task 1 - Site Reconnaissance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	555																							
7	Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6																							
8	Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	755																							
9	SAP Addendum	75 days	Mon 4/18/16	Fri 7/29/16	Roux																								
10	X Draft SAP Addendum	40 edays	Mon 4/18/16	Fri 6/10/16	Roux	6																							
11	EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10																							
12	X Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11																							
13	Source Area Investigation - Phase I Site Characterization Field Activities	120 days	Mon 5/9/16	Fri 10/21/16	Roux/Hydrometrics																								
14	GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux																								
15	Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux																								
16	Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days																							
17	Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days																							
18	Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days																							
19	Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux																								
20	Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux																								
21	Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics																								
22	Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18																							
23	Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22																							
24	Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days																							
25	Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24																							
26	Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays																							
27	Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26																							
28	Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays																							
29	Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28																							
30	Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays																							
31	Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30																							
32	Investigation Derived Waste Management/Disposal	390 days	Mon 4/4/16	Fri 9/29/17	Roux	555																							
33	Phase 1 Site Characterization Data Summary Report	251 days	Mon 10/3/16	Mon 9/18/17	Roux																								
34	Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25																							
35	X Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
36	EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35																							
37	X Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36																							
38	X Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	37																							
39	Screening Level Ecological Risk Assessment (SLERA)	361 days	Mon 5/2/16	Mon 9/18/17	Roux																								
40	Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux																								
41	X Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
42	EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41																							
43	X Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42																							
44	X Final Submission of SLERA Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	43																							
45	2017 Additional Field Activities	85 days	Mon 4/17/17	Fri 8/11/17	Roux																								
46	Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36																							
47	Pneumatic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31																							
48	Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47																							
49	Groundwater and Surface Water Sampling Data Summary Report	101 days	Mon 7/10/17	Mon 11/27/17	Roux																								
50	Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31																							
51	X GW/SW Summary Report to EPA/MDEQ	76 days	Mon 8/14/17	Mon 11/27/17	Roux	50																							
52	Baseline Human Health Risk Assessment Work Plan	270 days	Mon 9/18/17	Fri 9/28/18	Roux																								
53	X Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	38																							
54	EPA review of Draft BHHRA Work plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	53																							
55	X Response to EPA/MDEQ Comments on BHHRA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	54																							
56	EPA review of Response to Comments on BHHRA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	55																							
57	X Final Submission of BHHRA WP to EPA/MDEQ	15 days	Mon 9/10/18	Fri 9/28/18	Roux	56																							
58	Baseline Ecological Risk Assessment Work Plan	275 days	Mon 9/18/17	Fri 10/5/18	Roux																								
59	X Draft BERA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	44																							
60	EPA review of Draft BERA Work Plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	59																							
61	X Response to EPA/MDEQ Comments on BERA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	60																							
62	EPA review of Response to Comments on BERA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	61																							
63	X Final Submission BERA Work Plan to EPA/MDEQ	20 days	Mon 9/10/18	Fri 10/5/18	Roux	62																							
64	Phase II Remedial Investigation Sampling and Analysis Plan	117 days	Tue 11/28/17	Wed 5/9/18	Roux																								
65	X Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	67 days	Tue 11/28/17	Wed 2/28/18	Roux	51																							
66	EPA review of draft Phase II Sampling and Analysis Plan	25 days	Thu 3/1/18	Wed 4/4/18	EPA	65																							
67	X Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	15 days	Thu 4/5/18	Wed 4/25/18	Roux	66																							
68	X Final Phase II Sampling and Analysis Plan	10 days	Thu 4/26/18	Wed 5/9/18	Roux	67																							
69	South Percolation Pond Expedited Risk Assessment	35 days	Mon 10/30/17	Fri 12/15/17																									
70	South Percolation Pond Risk Expedited Risk Assessment Field Activities	10 days	Mon 10/30/17	Fri 11/10/17	Roux																								
71	Validation of South Pond Data	25 days	Mon 11/13/17	Fri 12/15/17	Data Validator	70																							
72	Phase II Remedial Investigation	129 days	Wed 4/25/18	Fri 10/19/18																									
73	Site Reconnaissance	3 days	Wed 4/25/18	Fri 4/27/18	Roux																								
74	Soil Borings with Geoprobe	15 days	Mon 4/30/18	Fri 5/18/18	Roux	73																							
75	Soil Borings and Monitoring Well Installation with Sonic Rig	19 days	Mon 4/30/18																										